Windows® 2000 Advanced Server Setup and Configuration Procedures

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PN: 455-01686-000 **March 2003**

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Introduction

Your system is preloaded with Windows 2000 Advanced Server Operating System (OS) and is ready for setup on your system. Windows 2000 Advanced Server includes the drivers to support devices in your system, the TCP/IP network protocol, and Internet Explorer. VERITAS Volume Manager™ is installed on your system during the setup of Windows 2000 Advanced Server Operating System. After completing the Windows 2000 Advanced Server setup, use these software notes to configure your ft server for a dual LAN configuration and to register your VERITAS Volume Manager software.

Before starting the setup procedure, you need to obtain certain information for use during setup. The information you need in advance is shown in the following table. NECC recommends that you obtain the information from your server administrator and record it in the table before starting.

After completing setup, you might want to use the Windows 2000 Control Panel to configure additional devices or Windows 2000 services and facilities.

Item	Information Required	Enter Your Information Here
1	Name of the Windows 2000 user.	
2	Name of the licensed organization.	
3	OEM License Key number for MS 2000 Server Software. This number is on the Certificate of Authenticity in the documentation pack included with your server.	
4	Name that you assign to the server.	
5	Obtain your network configuration information. For example: TCP/IP Configuration values such as IP address values, DNS and WINS address resolution facilities, DHCP Relay and Routing configuration values.	
6	OEM license key serial number for VERITAS Volume Manager. This number is included with the VERITAS Volume Manager CD and documentation. Note that the OEM license key serial number is located on the back of the CD case.	

Setup Procedure

Use the following procedure to set up Windows 2000 on your server.

1. Power up your server (for power up procedures, see the "Getting Started" sheet that came with your server).
2. The server goes through its Power-On-Self-Test (POST). POST displays a series of screens that do not require user intervention.
3. At completion of POST, a series of "Windows 2000 Setup: setup is initializing" screens and progress bars display. Again, user intervention is not required.
4. At completion of the Windows 2000 Server Setup initialization, the "Welcome to Windows 2000 Setup Wizard" dialog screen displays. Click **Next >** to continue.

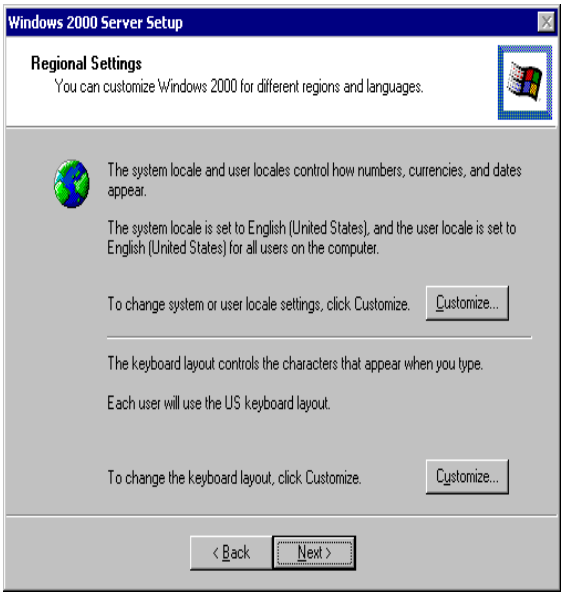
Windows 2000 Server Setup
Welcome to the Windows 2000 Setup Wizard
This wizard installs Windows 2000 Server on your computer. The wizard needs to gather some information about you and your computer to set up Windows 2000 properly.
Click Next to continue with Setup.
Microsoft Windows 2000
< Back
Next >

5. At the Microsoft "Software License Agreement" dialog screen, read and accept the Microsoft license agreement by clicking **I accept this agreement**. Click **Next >** to continue. (If you click **I don't accept this agreement**, Windows 2000 setup terminates and does not install.)

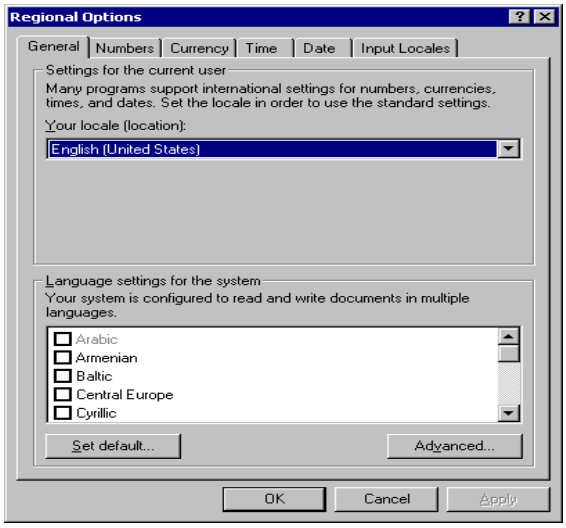
Windows 2000 Server Setup
License Agreement
Do you accept the terms of the License Agreement for Windows 2000?
Please read the following License Agreement. Press the PAGE DOWN key to see the rest of the agreement. To continue with Setup, you must accept the agreement.
Number of Client Access Licenses for Windows 2000 Server: 5
Number of Client Access Licenses for Windows 2000 Advanced Server: 25
I accept this agreement
I don't accept this agreement
< Back
Next >

6. At the “Regional Setting” dialog screen, check that the system locale, user locale, and keyboard are correct for your application.

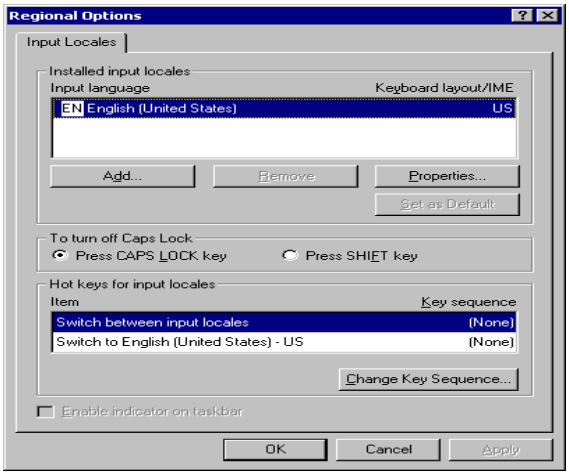
   - If the locales and keyboard display is correct, click **Next >** and go to step 9.
   - If the system and user locales require customization, go to step 7.
   - If the keyboard layout requires customization, go to step 8.


Windows 2000 Server Setup
Regional Settings
You can customize Windows 2000 for different regions and languages.
The system locale and user locales control how numbers, currencies, and dates appear.
The system locale is set to English (United States), and the user locale is set to English (United States) for all users on the computer.
To change system or user locale settings, click Customize.
Customize...
The keyboard layout controls the characters that appear when you type.
Each user will use the US keyboard layout.
To change the keyboard layout, click Customize.
Customize...
< Back
Next >

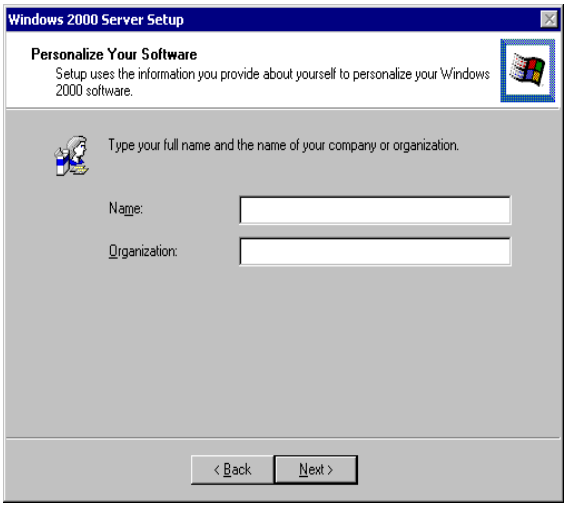
7. If you need to customize the system or user locales, click **Customize…** at the “Regional Settings” screen to open the “Regional Options” dialog screen. Click a tab and enter your choices. Click **OK** when done and automatically return to the “Regional Settings” dialog screen. Click **Next >** and go to step 9.



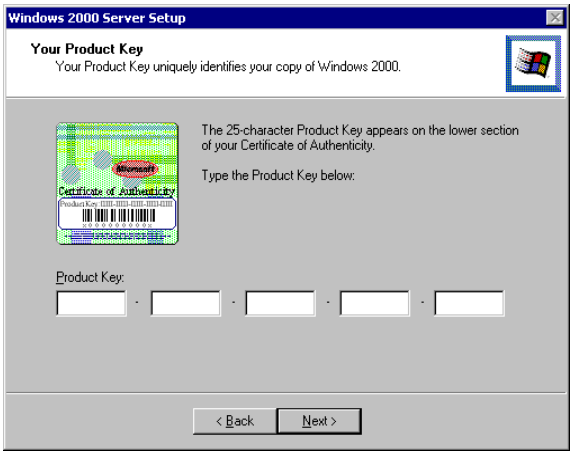
8. If you need to customize keyboard layout settings, click **Customize...** at the "Regional Settings" screen to open the "Input Locales" dialog screen. Make your changes and then click **OK** when done. You are automatically returned to the "Regional Settings" dialog screen. Click **Next >** and go to step 9.



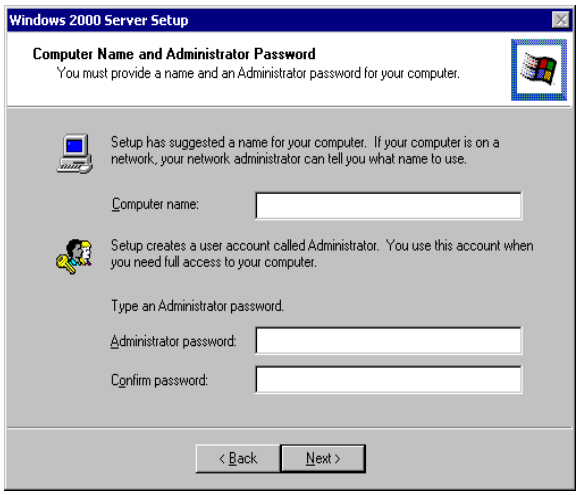
9. At the "Personalize Your Software" dialog screen, enter your name and organization. Click **Next >** when done.


Windows 2000 Server Setup
Personalize Your Software
Setup uses the information you provide about yourself to personalize your Windows 2000 software.
Type your full name and the name of your company or organization.
Name:
Organization:
< Back
Next >

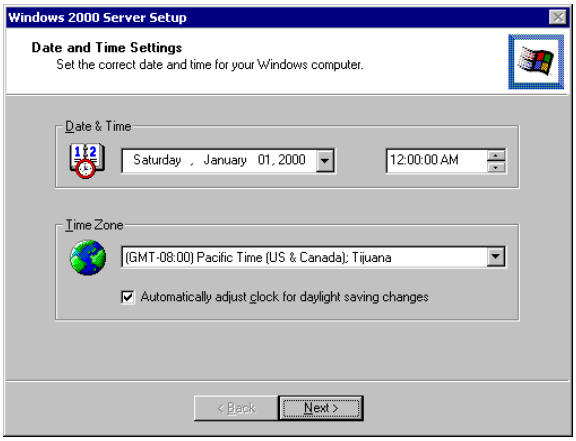
10. At the "Your Product Key" dialog screen, enter your software product key number. The key number is on the Certificate of Authenticity that shipped with your system. Be sure not to lose the product key number. Store the certificate in a secure place. Click **Next >** when done.


Windows 2000 Server Setup
Your Product Key
Your Product Key uniquely identifies your copy of Windows 2000.
Certificate of Authenticity
The 25-character Product Key appears on the lower section of your Certificate of Authenticity.
Type the Product Key below:
Product Key:
< Back
Next >

11. At the "Computer Name and Administrative Password" dialog screen, enter a computer name and an administrative password in the appropriate dialog box. Retype the password in the "Confirm password" dialog box exactly the same as you typed in the "Administrative password" dialog box. Be sure to save and store your password in a secure place. Click **Next >** when done.

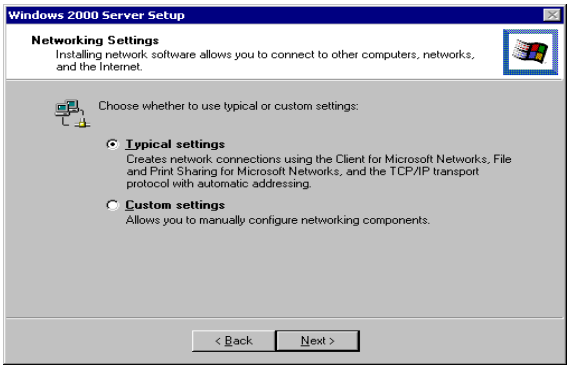

Windows 2000 Server Setup
Computer Name and Administrator Password
You must provide a name and an Administrator password for your computer.
Setup has suggested a name for your computer. If your computer is on a network, your network administrator can tell you what name to use.
Computer name:
Setup creates a user account called Administrator. You use this account when you need full access to your computer.
Type an Administrator password.
Administrator password:
Confirm password:
< Back
Next >

12. At the "Date and Time Settings" dialog screen, select your time zone and confirm or correct the date and time. Click **Next >** when done.


Windows 2000 Server Setup
Date and Time Settings
Set the correct date and time for your Windows computer.
Date & Time
Saturday , January 01, 2000
12:00:00 AM
Time Zone
(GMT-08:00) Pacific Time (US & Canada); Tijuana
Automatically adjust clock for daylight saving changes
< Back
Next >

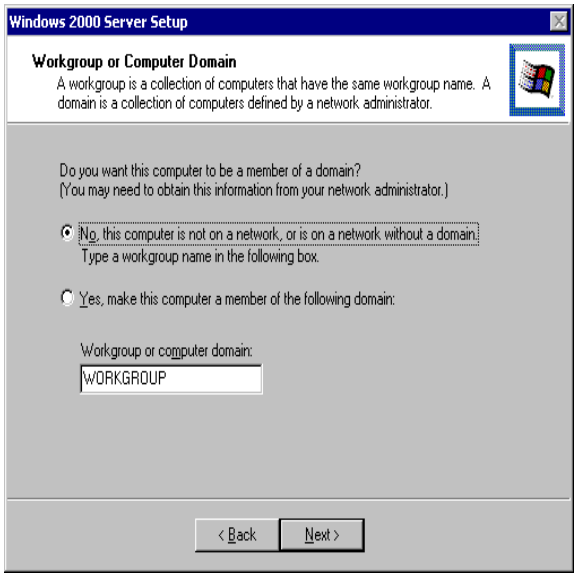
13. At the "Networking Settings" dialog screen, select **Typical settings** and click **Next**.

- **Note:** This is necessary as your network will be fully configured once you set up your fault-tolerant LAN connections.


Windows 2000 Server Setup
Networking Settings
Installing network software allows you to connect to other computers, networks, and the Internet.
Choose whether to use typical or custom settings:
Typical settings
Creates network connections using the Client for Microsoft Networks, File and Print Sharing for Microsoft Networks, and the TCP/IP transport protocol with automatic addressing.
Custom settings
Allows you to manually configure networking components.
< Back
Next >

14. At the "Workgroup or Computer Domain" dialog screen,

- Select "**No, this computer is not on a network…"**
- Leave the default name "**WORKGROUP"** in the "Workgroup or computer domain:" box.
- Click **Next**.


Windows 2000 Server Setup
Workgroup or Computer Domain
A workgroup is a collection of computers that have the same workgroup name. A domain is a collection of computers defined by a network administrator.
Do you want this computer to be a member of a domain?
(You may need to obtain this information from your network administrator.)
No, this computer is not on a network, or is on a network without a domain.
Type a workgroup name in the following box.
Yes, make this computer a member of the following domain:
Workgroup or computer domain:
WORKGROUP
< Back
Next >

15. At the "Completing the Windows 2000 Setup Wizard" screen:

- A "Windows 2000 has been successfully installed" progress bar displays. This is a countdown to reboot. You can also click **Restart**.
- Click **Finish** when the tasks are completed.

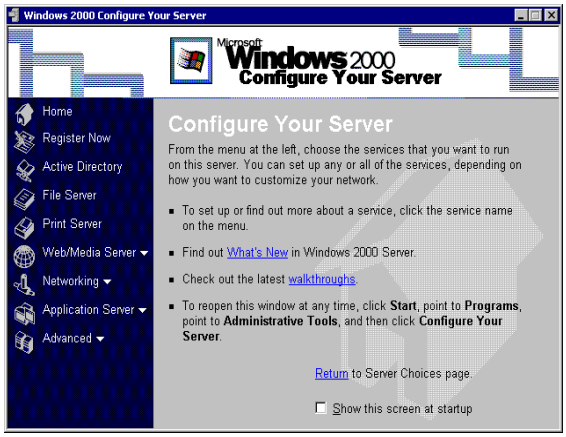
16. The system reboots, performs its POST tests, and starts Windows.

17. At the "Starting Windows 2000 Server Family" screen, press **Ctrl**+**Alt**+**Del** to open the Windows 2000 login screen.

> ***Note***: Your fault-tolerant system has been preloaded at the factory with only one PCI module installed, as this is the proper way to set up your system. When logging onto the system for the first time, the Windows 2000 "New Hardware Wizard" will display for the newly installed SCSI controller and SCSI disks of the PCI module #2. Click on Finish and decline to reboot the system at this time. You will reboot the system later when configuring the mirrored disks.

18. At the "Windows 2000 Login" dialog screen, the user name is automatically entered for you. Enter the password you set in step 11 of this procedure. Click **OK** to continue.

19. The Windows 2000 desktop opens and the “Windows 2000 Configure Your Server” dialog screen displays. Follow the prompts to configure your server. Then, configure your server for a dual LAN configuration and a dual disk configuration (see the following sections).


Windows 2000 Configure Your Server
Microsoft
Windows 2000
Configure Your Server
Home
Register Now
Active Directory
File Server
Print Server
Web/Media Server
Networking
Application Server
Advanced
Configure Your Server
From the menu at the left, choose the services that you want to run on this server. You can set up any or all of the services, depending on how you want to customize your network.
To set up or find out more about a service, click the service name on the menu.
Find out What's New in Windows 2000 Server.
Check out the latest walkthroughs.
To reopen this window at any time, click Start, point to Programs, point to Administrative Tools, and then click Configure Your Server.
Return to Server Choices page.
Show this screen at startup

The setup of your system is almost complete. The following five procedures must be performed to complete the installation of your system:

- Configure for Dual LAN (Network Adapter Teaming).
- Configure for Dual Disk (Mirror System Disk).
- Enter your VERITAS Volume Manager license.
- Set-up your monitoring facility to be properly alerted if a module fails and needs to be replaced.

Configuring for Dual LAN

The server builds two dual LAN configurations using the "Stratus emp-82559 10/100 Enet Adapter" and the "Stratus emb-82544GC Copper Gigabit Adapter" installed in the PCI modules. If you have installed additional adapters, you will also need to team them also.

Build the dual LAN configuration as follows.

1. At the Windows 2000 desktop, click **Start**, point to **Settings**, and click **Control Panel**. The Control Panel screen displays.
2. Double click the **Intel(r) PROSet II** icon. The Intel PRO Set II screen displays.
3. Right click **Network Components** at the Network Component Tree. At the popup menu, select **Create Team and Fault Tolerance**. "Team #1: Adaptive Fault Tolerance Mode" is added to the NetWork Tree.
4. Right click **Stratus emb- 82559 10/100 Enet Adapter** at the Network Component Tree. At the popup menu, select **Add to Team and Team #1:** to add the adapter. A Warning screen displays. Click **OK**.

5. Right click **Stratus emb- 82559 10/100 Enet Adapter #2:** at the Network Component Tree. At the popup menu, select **Add to Team and Team #1:** to add the adapter. Note that "Preferred Primary" or "Preferred Secondary" should not be set for either adapter.

6. Right click **Network Components** at the Network Component Tree. At the popup menu, select **Create Team** and either **Fault Tolerance** or **Load Balancing**. "Team #2: Adaptive Fault Tolerance Mode" or "Team #2: Adaptive Load Balancing Mode" is added to the NetWork Tree.

7. Right click **Stratus emb- 82544GC Copper Gigabit Adapter** at the Network Component Tree. At the popup menu, select **Add to Team and Team #2:** to add the adapter. A Warning screen displays. Click OK.

8. Right click **Stratus emb- 82544GC Copper Gigabit Adapter #2** at the Network Component Tree. At the popup menu, **select Add to Team and Team #2:** to add the adapter.

9. Click **OK**. The Intel PRO Set II screen closes after some period of time.

The Dual LAN settings are now in effect.

Configuring for Dual Disk

To achieve fault tolerance, the system disk and up to two additional disks must be mirrored in specific mirror pairs. The hard disk drive storage bays can house up to six hard disk drives, which when mirrored, results in three logical drives (see "Storage Bays" in Chapter 1 of the Express5800/320Lb/320Lb-RUser's Guide). The physical disk drive slots are numbered 1 to 3 (bottom to top) on each PCI module. Each hard disk on PCI module #1 is mirrored with the hard disk in the same slot on PCI module #2.

Perform the following procedure to configure your server for mirrored disk:

1. At the Windows 2000 desktop, click **Start/Programs/VERITAS/VERITAS Enterprise Administrator**. On the tree window (left side panel) under local host (or the server's name) expand **Disk Groups** and select **Basic Group**. The disks are shown on the right panel of the VERITAS Enterprise Administrator screen.

2. Right click the system disk and select **New Dynamic Disk Group**. When the initial screen of the "Dynamic Disk Group Wizard" appears, click **Next** to continue. Enter **DynamicGroup** in the Group Name box and check the **Create Windows 2000 Disk Management compatible group** check box. Confirm that the system disk is selected as a member of the dynamic group and click **Next**. A message box is displayed stating that upgrading these disks may force a reboot - click **Yes** to continue.

   A confirmation window is displayed detailing the contents of the disks to be upgraded - click **Next** to continue. A message box is displayed that any file systems on the disks to be upgraded will be dismounted, and that once upgraded, prior versions of Windows can not be booted - click **Yes** to continue. A final confirmation window will appear. Confirm that the specification of the disk group is correct and click **Finish**. You are warned that a system reboot is required to complete the upgrade - click **OK** to reboot the system.

3. After the reboot, press **Ctrl-Alt-Del** to logon and enter the Administrator password. When the "System Settings Changed" message box is displayed, click **Yes** to restart the computer again.

4. After the reboot, press **Ctrl-Alt-Del** to logon and enter the Administrator password. Press **OK** to continue. The system returns to the Windows desktop.

5. At the Windows 2000 desktop, click **Start/Programs/VERITAS/VERITAS Enterprise Administrator**. Select the **Disk View** tab on the right side of the VERITAS Enterprise Administrator screen.

6. Any other disk other than the system disk of PCI module #1 does not have a signature. **Right click on each disk** and select “Write Signature”. Click **Yes** when asked to confirm that you wish to write a signature for that disk.

7. Select the **Basic Group** and the PCI module #2 slot 1 disk will be displayed in the "Disk View" panel. To identify the disk, look at the properties of each disk on the screen (use the horizontal scroll bar at the bottom of the window pane). Disk slots 1, 2 and 3 correspond to SCSI target ID 0, 1, and 2 respectively and PCI modules correspond to different SCSI port numbers. Currently, only the disk in slot 1 of PCI module #1 has space usage, so by elimination the other disk with a SCSI target ID of 0, is the disk in slot 1 of PCI Module #2. (Refer to Chapter 1 of the Express5800/320Lb/320Lb-R User's Guide to identify which SCSI port number corresponds to which PCI Module.)

8. **Right click** the disk and select **Add Disk to Dynamic Disk Group**. The "Add Disk to Disk Group Wizard" will start. Confirm that the disk is selected as a member of the dynamic disk group created in step 2 above and click **Next** to continue. A confirmation screen is displayed, click **Finish** to complete adding the disk.

9. From the VERITAS Enterprise administrator tree window**, select the system volume (C:)** from the Volumes tree. **Right click on the C: volume** and select “Mirror/Add.”

10. When the “Add Mirror" screen displays, click the **Manually Select Disk** radio button, **select the new disk** and click the **Add** button. A Volume Manager warning screen displays. Click **OK**. It is not necessary to modify the "boot.ini" file in order to boot from the mirror of the system disk in the fault-tolerant environment.

11. The "VERITAS Enterprise Administrator" screen will indicate if disk mirroring is still in progress. The progress of the mirror synchronization can be monitored by clicking the **Task** tag at the bottom of the VERITAS Enterprise Administrator screen. The mirroring will continue even if this screen is closed. However, the system should not be rebooted until mirroring has been completed.

12. For each additional disk pair in your system, add the disks to a dynamic group, create one or more volumes, and mirror the volumes.

The dual disk configuration is effective when mirroring has completed.

Entering your VERITAS Volume Manager License

Your system has been configured with a temporary license for VERITAS Volume Manager. You'll need to enter your permanent license.

1. Launch the Volume Manager by clicking on **Start/ Programs/VERITAS/ VERITAS Enterprise Administrator**.
2. Select the menu **Tools / System License** in "VERITAS Enterprise Administrator." The license screen displays.

> ***Note***: Your license key certificate is located in the accessory box shipped with your Fault-Tolerant system.

3. **Enter** your license number and click the **Replace** button.
4. Click **OK**. You license is entered.
5. Close "VERITAS Enterprise Administrator."

Your permanent license is now in effect.

Setting-up Your Monitoring Facility

Your system includes the ESMPRO Agent installed at the factory. You'll need to setup a monitoring station to receive alerts reported by the ESMPRO Agent. Refer to the ESMPRO User's Guide located on your EXPRESSBUILDER CD for detailed information.

Perform the following procedures to install and configure ESMPRO Manager on your monitoring station.

Installing ESMPRO Manager

> ***Note*:** You need a system running Windows to install ESMPRO Manager. It must be a system separate from the Fault-Tolerant system.

1. Insert the EXPRESSBUILDER CD into your monitoring station. The "Master Control" application screen displays.
2. Click **Setup**, then click **ESMPRO**. The ESMPRO Setup screen displays.
3. Click **Manager**. The setup of ESMPRO Manager displays.
4. Follow instructions on the screen to finish the ESMPRO Manager installation.

Changing the TCP/IP Timeout Value

Change your TCP/IP timeout value to adapt to your fault-tolerant server characteristics. This is necessary to ensure that the management system is properly communicating with the fault-tolerant system and not timing out when a CPU module is brought online on your system.

1. Launch Windows Explorer.
2. Explore the CD folder. Go to **WINNT\W2K**.
3. Double click **FTREG.EXE**. A message box displays.
4. Click **OK**. Another message box displays.
5. Click **OK**. Your TCP/IP settings have been changed.

Selecting Your Reporting Message

Select your reporting method for the ESMPRO Agent installed on your fault-tolerant server. At a minimum you should use the SNMP method of reporting. (See below for SNMP configuration information.)

To configure additional reporting methods:

1. At the Windows 2000 desktop, click **Start**, point to **Settings**, and click **Control Panel**. The Control Panel screen displays.
2. Double click the **ESMPRO Agent icon**. The ESMPRO agent screen displays.
3. Click **Report Setting**. The Alert Manager screen displays.

Note: By using the Menus Setting/Base Setting. and Settings/Destination Settings. you can configure additional services to report alerts via email, pagers, scripts, etc. Refer to the ESMPRO User's Guide on your EXPRESSBUILDER CD for more information.

Configuring your SNMP Trap Destination and Community Rights

The SNMP Service has been installed on your system. You need to set the trap destination to your monitoring station(s).

1. At the Windows 2000 desktop, click **Start**, point **to Programs, Administrative Tools**, and click **Services**. The Services Management Console screen displays.
2. Right click **SNMP Service**. Click **Properties**. The Properties panel displays.
3. Click the **Agent** tab. Setup your contact and location.
4. Click the **Trap Tab**. Enter **Trap Destinations** associated with the public community.
5. Click the **Security Tab**. Add a "READ WRITE community right" by clicking on the **Add** button.

Note: The ESMPRO Manager will be able to monitor your system, but will not be able to change thresholds if you do not set a community name with the READ WRITE right. Also, it is possible, but not recommended, to change the rights of the public community to add the READ WRITE right, as it represents a security hole.

Your Fault-Tolerant system is now monitored and ready to report events.